

Progress Report No. 11

Title: *A Study of Early Detection of Insect Infestations and Density/Distribution of Host Plants.*

Citrus Insects Research
USDA, ARS
509 West Fourth St., Weslaco, Texas 78596

Period: December 1-31, 1973

REP Investigation No. 319
ASA Contract No. 116301

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- (A) During this reporting period 19.3 hours were flown. Areas included were: Mission test site underflight taken during the Skylab pass on December 28, 1973, Delta Lake test site, line 19 (before freeze), line 19 (after freeze), and lines 10 thru 14 of the Rio Grande Valley.

The film was developed, labeled, and photointerpretation techniques employed for areas of immediate concern. This was an excellent time for collection of Skylab data, since the sugar cane and some annual crops were killed by the freeze, making citrus easier to identify.

- (B) Photography from aircraft has demonstrated that the experiment's scientific objectives are attainable. Satellite data with maximum resolution is now required to assure completion of the objectives. We continue to fly every day possible for aerial photographs that will provide complete coverage of the Texas citrus area and US-Mexico Border approaches.
- (C) The recent Skylab photography should provide the most useful data to date, since weather conditions and activation of the S-190B system over our test area offer maximum potential for extraction of information that can be correlated with this Skylab data when it is received.

- (D) Insect populations are at low levels during this period, so it will be necessary to use our film primarily for crop identification and acreage counts at this time of the year. Due to the environmental influences that affect reflectance characteristics at this time of year the timing of underflights and ground truth for correlation with the Skylab data is critical.
- (E) We will continue to collect data during skylab passes and every other flyable day. Aircraft data collection is providing valuable photography of the Rio Grande Valley, which has many potential applications on a variety of crops that will benefit numerous disciplinary interests. Work with the Multispectral camera and viewing system shows promise for enhancement of many agricultural features. When the data from the 190 B Skylab 4 is received, this background data should provide an excellent base for development and utilization of the satellite data.
- (F) Travel was limited to that associated with local flying and ground truth collecting efforts.